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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/698,696	10/27/2000	Christopher J. Curtin	CT-A131 US	6128

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EXAMINER	
QUARTERMAN, KEVIN J	

ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 04/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/698,696

Applicant(s)

CURTIN ET AL.

Examiner

Kevin Quarterman

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-69, 71-74, 76, 77, 84-126, 266, 267 and 271-364 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-8, 10-40, 84-126, 266 and 271-336 is/are allowed.
- 6) ☒ Claim(s) 41-69, 71-74, 76, 77, 267 and 337-364 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant's amendment and remarks received 17 February 2005 have been entered.

2. The indicated allowability of claims 41-69, 71-74, 76, 77, 267, and 337-364 is withdrawn in view of the newly discovered reference(s) to Clerc (US 5,786,660).

Rejections based on the newly cited reference follow.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 41-69, 71-74, 76, 77, 267, and 337-364 are rejected under 35 U.S.C. 102(b) as being anticipated by Clerc (US 5,786,660).

5. Regarding independent claim 41, Fig. 3 of Clerc shows a structure comprising a plate (10); an electron-emissive element (2) overlying the plate; a support region (17) overlying the plate; and a getter region (21) overlying at least part of the support region, a composite opening (14) extending through the getter and support regions generally laterally where the electron-emissive element overlies the plate, the composite opening comprising an opening through the getter region and an opening through the support region.

6. Regarding claim 42, Fig. 3 of Clerc shows a dielectric layer (24) overlying the plate below the support region, the electron-emissive element situated mostly in an opening in the dielectric layer.
7. Regarding claim 43, Fig. 3 of Clerc shows a control electrode (15) for selectively extracting electrons from the electron-emissive element or for selectively passing electrons emitted by the electron-emissive element, the control electrode overlying the plate and having an opening (14) through which the electron-emissive element is exposed.
8. Regarding claim 44, Fig. 3 of Clerc shows an electrically insulating material (13) extending over at least part of the control electrode.
9. Regarding claim 45, Fig. 3 of Clerc shows the support region extending further away from the plate than the control electrode.
10. Regarding claim 46, Fig. 3 of Clerc shows the support region comprising a base focusing structure of an electron-focusing system for focusing electrons emitted by the electron-emissive element.
11. Regarding claim 47, Fig. 3 of Clerc shows the electron-focusing system including an electrically non-insulating focus coating (21), which comprises the getter region, whereby at least part of the focus coating overlies the base focusing structure.
12. Regarding claim 48, Fig. 3 of Clerc shows the electron-focusing system including an electrically non-insulating focus coating (21) situated over at least part of the getter region, an opening extending through the focus coating at least generally laterally where the electron-emissive element overlies the plate.

13. Regarding claim 49, Fig. 3 of Clerc also shows the focus coating being perforated.

14. Regarding claim 50, Fig. 3 of Clerc shows the electron-focusing system including an electrically non-insulating focus coating (15) situated over at least part of the base focusing structure and under at least part of the getter region.

15. Regarding claim 51, Fig. 3 of Clerc shows the support region comprising a control electrode (15) for selectively extracting electrons from the electron-emissive element (2) or for selectively passing electrons emitted by the electron-emissive element.

16. Regarding claim 52, Fig. 3 of Clerc shows a raised section (13) overlying the plate and extending over at least part of the control electrode (15), the getter region being exposed through or/and situated in an opening in the raised section.

17. Regarding claim 53, Clerc discloses the getter region (21) focusing electrons emitted by the electron-emissive element (col. 4, ln. 25-35).

18. Regarding claim 54, Clerc discloses the getter region comprising electrically non-insulating material substantially electrically decoupled from the control electrodes (col. 4, ln. 25-35).

19. Regarding claim 55, Fig. 3 of Clerc shows an electrically insulating material (13) situated between at least part of the control electrode and at least part of the getter region.

20. Regarding claim 56, Clerc discloses the getter region comprising at least one of aluminum, titanium, vanadium, iron, zirconium, niobium, molybdenum, barium, tantalum, tungsten, and thorium (col. 5, ln. 25-26).

21. Regarding claim 57, Clerc discloses the getter region consisting largely of only a single atomic element (col. 5, ln. 25-26).

22. Regarding claim 58, Clerc discloses the single atomic element being one of aluminum, titanium, vanadium, iron, zirconium, niobium, molybdenum, barium, tantalum, tungsten, and thorium (col. 5, ln. 25-26).

23. Regarding claim 59, Fig. 3 of Clerc shows a device (7) for emitting light upon being struck by electrons emitted by the electron-emissive element.

24. Regarding claim 60, Fig. 3 of Clerc shows the light-emitting device including a further getter region (9) situated at least partially in an active light-emitting portion of the light-emitting device.

25. Regarding independent claim 61, Fig. 3 of Clerc shows a structure comprising a plate (10); an electron-emissive element (2) overlying the plate; a control electrode (15) for selectively extracting electrons from the electron-emissive element or for selectively passing electrons emitted by the electron-emissive element, the control electrode overlying the plate and having an opening (14) through which the electron-emissive element is exposed; and a getter region (21) overlying at least part of the control electrode and contacting, or connected by directly underlying electrically insulating material (13) to, the control electrode.

26. Regarding claim 62, Fig. 3 of Clerc shows an opening (14) extending through the getter region generally laterally where the electron-emissive element (2) overlies the plate.

27. Regarding claim 63, Fig. 3 of Clerc shows a dielectric layer (24) overlying the plate below the support region, the electron-emissive element situated mostly in an opening in the dielectric layer.

28. Regarding claim 64, Fig. 3 of Clerc shows a raised section (13) overlying the plate and also extending over at least part of the control electrode (15), the electron-emissive element (2) being exposed through a primary opening (14) in the raised section.

29. Regarding claim 65, Fig. 3 of Clerc shows the getter region being exposed through or/and situated in the primary opening in the raised section.

30. Regarding claim 66, Clerc discloses the getter region (21) comprising electrically non-insulating material electrically coupled to the control electrodes (15) (col. 4, ln. 25-35).

31. Regarding claim 67, Clerc discloses the raised section comprising electrically non-insulating material substantially electrically decoupled from both the control electrode and the non-insulating material of the getter region (col. 3, ln. 32-33).

32. Regarding claim 68, Fig. 3 of Clerc shows the getter region exposed through or/and situated in a further opening in the raised section.

33. Regarding claim 69, Clerc discloses the getter region comprising electrically non-insulating material substantially electrically decoupled from the control electrodes (col. 4, ln. 25-35).

34. Regarding claim 71, Clerc discloses the raised section comprising electrically non-insulating material substantially electrically coupled to the non-insulating material of the getter region (col. 3, ln. 32-33).

35. Regarding claim 72, Fig. 3 of Clerc shows the raised section comprising an electron-focusing system for focusing electrons emitted by the electron-emissive element.

36. Regarding claim 73, Clerc discloses the getter region (21) focusing electrons emitted by the electron-emissive element (col. 4, ln. 25-35).

37. Regarding claim 74, Clerc discloses the getter region comprising electrically non-insulating material substantially electrically decoupled from the control electrodes (col. 4, ln. 25-35).

38. Regarding claim 76, Fig. 3 of Clerc shows a device (7) for emitting light upon being struck by electrons emitted by the electron-emissive element.

39. Regarding claim 77, Fig. 3 of Clerc shows the light-emitting device including a further getter region (9) situated at least partially in an active light-emitting portion of the light-emitting device.

40. Regarding claim 267, Clerc discloses the getter region comprising at least one of aluminum, titanium, vanadium, iron, zirconium, niobium, molybdenum, barium, tantalum, tungsten, and thorium (col. 5, ln. 25-26).

41. Regarding independent claim 337, Fig. 3 of Clerc shows a structure comprising a plate (10); a multiplicity of laterally separated electron-emissive regions (2) overlying the plate; a group of laterally separated control electrodes (15) for selectively extracting electrons from the electron-emissive element or for selectively passing electrons emitted by the electron-emissive element, each control electrode overlying the plate and having a plurality of openings (14) through which a like plurality of the electron-emissive regions are exposed; and a getter region (21) overlying at least part of each control electrode and contacting, or connected by directly underlying electrically insulating material (13) to, each control electrode.

42. Regarding claim 338, Fig. 3 of Clerc shows a like multiplicity of openings extending through the getter region generally laterally where the electron-emissive regions respectively overlie the plate.

43. Regarding claim 339, Fig. 3 of Clerc shows a dielectric layer (24) overlying the plate below the control electrodes, the electron-emissive regions comprising electron-emissive elements (2) situated mostly in openings through the dielectric layer.

44. Regarding claim 340, Fig. 3 of Clerc shows a raised section (13) overlying the plate and extending over at least part of each control electrode, a like multiplicity of primary openings (14) extending through the raised section to respectively expose the electron-emissive regions.

45. Regarding claim 341, Fig. 3 of Clerc shows the getter region exposed through or/and situated in the primary openings in the raised section.

46. Regarding claim 342, Clerc discloses the getter region comprising multiple laterally separated electrically non-insulating getter portions (col. 4, ln. 25-35), each electrically coupled to only one of the control electrodes.

47. Regarding claim 343, Clerc discloses the raised section comprising electrically non-insulating material substantially electrically decoupled from both the control electrode and the getter portions (col. 3, ln. 32-33).

48. Regarding claim 344, Fig. 3 of Clerc shows the getter region exposed through or/and situated in multiple openings in the raised section.

49. Regarding claim 345, Fig. 3 of Clerc shows the getter region comprising multiple laterally separated electrically non-insulating getter portions, each exposed through or/and situated in at least one of the further openings in the raised section.

50. Regarding claim 346, Clerc discloses the getter region substantially electrically decoupled from the control electrode (col. 4, ln. 25-35).

51. Regarding claim 347, Clerc discloses the raised section comprising electrically non-insulating material substantially electrically coupled to the getter portions (col. 3, ln. 32-33).

52. Regarding claim 348, Fig. 3 of Clerc shows the raised section comprising an electron-focusing system for focusing electrons emitted by the electron-emissive element.

53. Regarding claim 349, Clerc discloses the getter region (21) focusing electrons emitted by the electron-emissive element (col. 4, ln. 25-35).

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54. Regarding claim 350, Clerc discloses the getter region comprising electrically non-insulating material substantially electrically decoupled from the control electrodes (col. 4, ln. 25-35).

55. Regarding claim 351, Clerc discloses the getter region comprising at least one of aluminum, titanium, vanadium, iron, zirconium, niobium, molybdenum, barium, tantalum, tungsten, and thorium (col. 5, ln. 25-26).

56. Regarding claim 352, Fig. 3 of Clerc shows each electron-emissive region comprising multiple electron-emissive elements (2).

57. Regarding claim 353, Fig. 3 of Clerc shows a light-emitting device having an active light-emitting portion comprising a like multiplicity of laterally separated light-emissive regions (7) situated generally opposite the electron-emissive regions, each light-emissive region emitting light upon being struck by electrons emitted by the oppositely situated electron-emissive region.

58. Regarding claim 354, Fig. 3 of Clerc shows a further getter region (9) situated at least partially in, and distributed across, the active light-emitting portion.

59. Regarding independent claim 355, Fig. 3 of Clerc shows a structure comprising a plate (10); a multiplicity of laterally separated electron-emissive regions (2) overlying the plate; and a getter region (21) overlying the plate, a like multiplicity of openings (14) extending through the getter region to respectively expose the electron-emissive regions, the getter region being shaped, positioned, and controlled to focus electrons emitted by the electron-emissive regions (col. 4, ln. 25-35).

60. Regarding claim 356, Clerc discloses the getter region acting as a focusing gate, which would receive a focusing potential.

61. Regarding claim 357, Fig. 3 of Clerc shows a group of laterally separated control electrodes (15) for selectively extracting electrons emitted by the electron-emissive regions or for selectively passing electrons emitted by the electron-emissive regions, each control electrode overlying the plate and having a plurality of openings through which a like plurality of the electron-emissive regions are respectively exposed.

62. Regarding claim 358, Clerc discloses the getter region comprising electrically non-insulating material substantially electrically decoupled from the control electrodes (col. 4, ln. 25-35).

63. Regarding claim 359, Fig. 3 of Clerc shows an electrically insulating layer (13) overlying at least part of each control electrode, the getter region overlying at least part of the insulating layer.

64. Regarding claim 360, Fig. 3 of Clerc shows the getter region comprising an electrically insulating base focusing structure (13) and an electrically non-insulating focus coating (21) that overlies the base focusing structure.

65. Regarding claim 361, Clerc discloses the getter region comprising at least one of aluminum, titanium, vanadium, iron, zirconium, niobium, molybdenum, barium, tantalum, tungsten, and thorium (col. 5, ln. 25-26).

66. Regarding claim 362, Fig. 3 of Clerc shows each electron-emissive region comprising multiple electron-emissive elements (2).

67. Regarding claim 363, Fig. 3 of Clerc shows a light-emitting device having an active light-emitting portion comprising a like multiplicity of laterally separated light-emissive regions (7) situated generally opposite the electron-emissive regions, each light-emissive region emitting light upon being struck by electrons emitted by the oppositely situated electron-emissive region.

68. Regarding claim 364, Fig. 3 of Clerc shows a further getter region (9) situated at least partially in, and distributed across, the active light-emitting portion.

Allowable Subject Matter

69. Claims 1-8, 10-40, 84-126, 266, and 271-336 are allowed.

70. The following is a statement of reasons for the indication of allowable subject matter: The above referenced claims were previously allowed in the Examiner's prior office action mailed 30 November 2004. Applicant has cancelled all rejected claims, leaving only the allowed claims pending. The Examiner provided a statement of reasons for the indication of allowable subject matter in the previous office action, which are repeated in this office action.

71. Regarding independent claim 1, the prior art of record neither shows or suggests a structure comprising, in addition to other limitations of the claim, a getter region overlying at least part of a light-blocking region and extending no more than partially laterally across a light-emissive region, and a perforated electrically non-insulating layer overlying at least part of the getter region or/and at least part of the light-emissive region. Due to their dependency upon independent claim 1, claims 2-8 and 10-30 are also allowable.

72. Regarding independent claim 31, the prior art of record neither shows or suggests a structure comprising, in addition to other limitations of the claim, an electrically non-insulating layer overlying at least part of a light-blocking region, and a getter region overlying at least part of the non-insulating layer above at least part of the light-blocking region, an opening extending largely through the getter region generally laterally where the light-emissive region overlies a plate. Due to their dependency upon independent claim 31, claims 32-40 and 266 are also allowable.

73. Regarding independent claim 84, the prior art of record neither shows or suggests a structure comprising, in addition to other limitations of the claim, a group of laterally separated control electrodes overlying a plate, electron-emissive elements being exposed through respective openings in the control electrodes, and a getter region overlying the plate at least partially between a consecutive pair of the control electrodes. Due to their dependency upon independent claim 84, claims 85-98 and 271-273 are also allowable.

74. Regarding independent claim 99, the prior art of record neither shows or suggests a structure comprising, in addition to other limitations of the claim, a group of laterally separated control electrodes overlying a plate; a raised section overlying the plate and extending over at least part of each control electrode; and a getter region overlying the plate and exposed through or/and situated in a primary opening in the raised section. Due to their dependency upon independent claim 99, claims 100-113 and 274-280 are also allowable.

75. Regarding independent claim 114, the prior art of record neither shows or suggests a structure comprising, in addition to other limitations of the claim, a group of electron-emissive elements overlying a plate and situated mostly in respective laterally separated openings in a dielectric layer and a getter region overlying at least part of the dielectric layer and contacting, or connected by directly underlying electrically non-insulating material to, the dielectric layer, at least part of the getter region situated above a location between a pair of the openings in the dielectric layer. Due to their dependency upon independent claim 114, claims 115-126 and 281-288 are also allowable.

76. Regarding independent claim 289, the prior art of record neither shows or suggests a structure comprising, in addition to other limitations of the claim, a multiplicity of openings extending through a light-blocking region; a like multiplicity of laterally separated light-emissive regions overlying a plate; a getter region overlying at least part of the light-blocking region and extending no more than partially laterally across each light-emissive region; and a perforated electrically non-insulating layer overlying at least part of the getter region or/and at least part of each light-emissive region. Due to their dependency upon independent claim 289, claims 290-309 are also allowable.

77. Regarding independent claim 310, the prior art of record neither shows or suggests a structure comprising, in addition to other limitations of the claim, a multiplicity of openings extending largely through a light-blocking region; a like multiplicity of laterally separated light-emissive regions overlying a plate, each light-

emissive region situated at least partially in a different corresponding one of the openings in the light-blocking region; an electrically non-insulating layer overlying at least part of the light-blocking region; and a getter region overlying at least part of the non-insulating layer above the light-blocking region, a like multiplicity of openings extending largely through the getter region respectively generally laterally where the light-emissive regions overlie the plate. Due to their dependency upon independent claim 310, claims 311-318 are also allowable.

78. Regarding independent claim 319, the prior art of record neither shows or suggests a structure comprising, in addition to other limitations of the claim, a multiplicity of laterally separated electron-emissive regions overlying a plate; a support region overlying the plate; and a getter region overlying at least part of the support region, a multiplicity of composite openings extending through the getter and support regions generally laterally where the electron-emissive regions overlie the plate, each composite opening comprising an opening through the getter region and an opening through the support region. Due to their dependency upon independent claim 319, claims 320-336 are also allowable.

Contact Information


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quarterman whose telephone number is (571) 272-2461. The examiner can normally be reached on M-TH (7-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin Quarterman
Examiner
Art Unit 2879

kq 
23 March 2005


Joseph Williams
Primary Examiner
Art Unit 2879